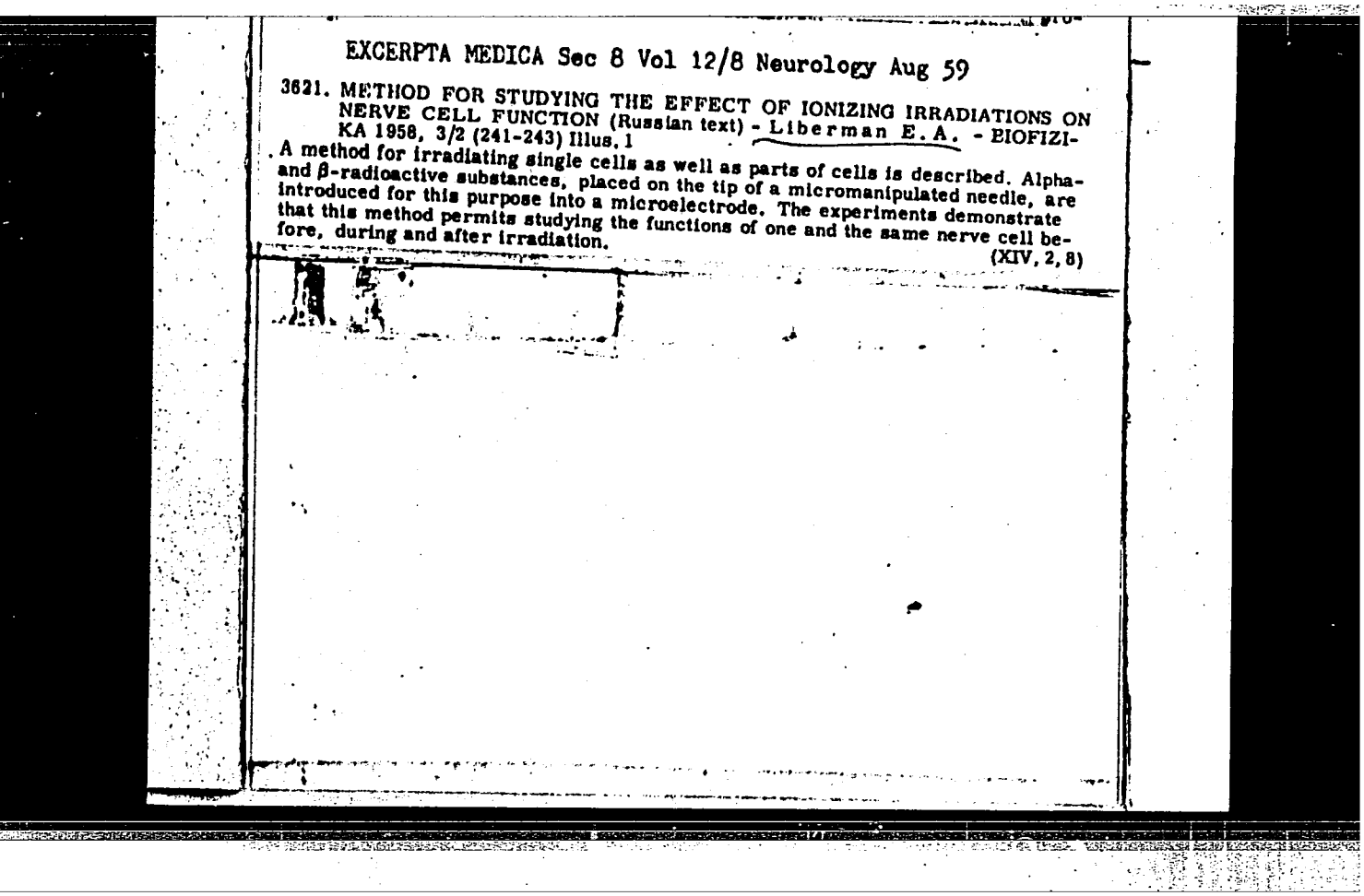


EXCERPTA MEDICA Sec 8 Vol 12/8 Neurology Aug 59

3621. METHOD FOR STUDYING THE EFFECT OF IONIZING IRRADIATIONS ON NERVE CELL FUNCTION (Russian text) - Liberman E.A. - BIOFIZIKA 1958, 3/2 (241-243) Illus. 1

A method for irradiating single cells as well as parts of cells is described. Alpha- and β-radioactive substances, placed on the tip of a micromanipulated needle, are introduced for this purpose into a microelectrode. The experiments demonstrate that this method permits studying the functions of one and the same nerve cell before, during and after irradiation.

(XIV, 2, 8)

LIBERMAN, Ye.A.

Possible methods of revealing n-type conductivity in elements of nervous system. Biofizika 3 no.6:743-745 '58. (MIRA 12:1)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(NERVOUS SYSTEM, physiol.
pathways of electron transm. in NS (Rus))

LIBERMAN, Ye. A. Cand Phys-Math Sci -- (diss) " Certain problems of the dosimetry of ionizing radiations." Mos, 1959. 10 pp (Min of Higher and Secondary Specialized Education RSFSR. Mos Phys Engineering Inst), 100 copies (KL, 45-59, 143)

LIBERMAN, Ye.A.; VAYNTSVAYG, M.N.; TSOFINA, L.M.

Effect of a constant magnetic field on the excitation threshold of an isolated frog nerve. Biofizika 4 no. 4:505-506 '59.
(MIRA 14:4)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(NERVES) (MAGNETIC FIELDS)

LIBERMAN, Ye.A.; CHAYLAKHYAN, L.M.

Nature of the action potential. Biofizika 4 no.5:622-639 '59.
(MIRA 14:6)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ELECTROPHYSIOLOGY)

LIBERMAN, Ye., nauchnyy sotrudnik

Nerves do work. Znan.sila 34 no.2:30-32 F '59. (MIRA 12:3)

1. Institut biofiziki AN SSSR.
(NERVES)

LIBERMAN, Ye.A.; TSOFINA, L.M.; VAYNTSVAYG, M.N.

Role of mono- and bivalent ions in the generation of the action potential. Biofizika 6 no. 1:45-51 '61. (MIRA 14:2)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(IONS) (ELECTROPHYSIOLOGY)

LIBERMAN, Ye.A.

Elementary theory of semipermeable membranes and the "phase" theory of bioelectric potentials. Biofizika 6 no. 2:177-186 '61. (MIRA 14:4)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ELECTROPHYSIOLOGY) (MEMBRANES (CHEMISTRY))

LIBERMAN, Ye.A.; TSOFINA, L.M.; GLAGOLEVA, I.M.

Abnormally large resting and action potentials of the muscle fibers of a crab in potassium-free solutions. Biofizika 6 no.3:373-374 '61. (MIRA 14:6)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(MUSCLE) (ELECTROPHYSIOLOGY)

GLAGOLEVA, I.M.; LIBERMAN, Ye.A.

Studying the "quantum" nature of miniature potentials in the end plate of myoneural junction of a frog. Biofizika 6 no.4:459-463 '61. (MIRA 14:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ELECTROPHYSIOLOGY) (CHOLINE)

LIBERMAN, E. A., TSOFINA, L.M., VERKHOVSKAYA, I.N.

"The Study of Electric Properties of Crustacea Muscle Membrane and Their Relation to Ionic Fluxes."

report presented at the Intl. Biophysics Congress, Stockholm, Sweden, 31 July - 4 August 1961.

Institute of Biophysics, USSR Academy of Science, Moscow, USSR.

LIBERMAN, Ye.A., TSOFINA, L.M.

Measurement of the flow of Na^+ and Ca^{++} passing across the surface of crustacean muscle fibers during excitation. Biofizika, 7 no.2:201-202 '62. (MIRA 16:8)

1. Institut fiziki AN SSSR, Moskva.
(MUSCLE) (CALCIUM) (SODIUM)

TSOFINA, L.M.; LIBERMAN, Ye.A.

Effect of a change in the concentration of cations and anions on the biopotentials of muscle fibers in crustaceans. Biofizika 7 no.3:311-317 '62. (MIRA 15:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ELECTROPHYSIOLOGY) (MUSCLES) (SALTS--PHYSIOLOGICAL EFFECT)

TSOFINA, L.M.; LIBERMAN, Ye.A.

Permeability of crab muscle fibers to Ca and Sr during excitation. Biofizika 7 no.6:744-748 '62.
(MIRA 17:1)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.; TSOFINA, L.M.; GLAGOLEVA, I.M.

Generation of the action potential by muscular fibers of crustaceans in solutions containing mixtures of $BaCl_2$ and $SrCl_2$. Dokl.AN SSSR 145 no.4:945-948 Ag '62. (MIRA 15:7)

1. Institut biologicheskoy fiziki AN SSSR. Predstavleno akademikom Yu.A.Orlovym.
(ELECTROPHYSIOLOGY) (BARIUM CHLORIDE—PHYSIOLOGICAL EFFECT)
(STRONTIUM CHLORIDE—PHYSIOLOGICAL EFFECT)

LIBERMAN, Ye.A.; CHAYLAKHYAN, L.M.

The nature of biopotentials of nerve and muscle fibers. Report No.1: The current membrane theory and its difficulties. TSitologiia 5 no.3: 311-318 My-Je '63. (MIRA 17:5)

1. Institut biofiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.; CHAYLAKHYAN, L.M.

Nature of biopotentials of nerve and muscle fibers. Report No.2: Advantages and disadvantages of the current phase theory of biopotentials. TSitologiia 5 no.4:440-448 Jl-Ag '63. (MIRA 17:8)

1. Institut biofiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.

Role of energetic barriers in the origin of membrane potential differences. Biofizika 8 no.1:136-138 '63. (MIRA 17:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

TSOFINA, L.M.; LIBERMAN, Ye.A.

Studies on the effect of substituting Cl ions in solution on the mechanical response of single muscle fibers of river crayfish. Biofizika 8 no.6:738-740 '63. (MIRA 17:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

ACCESSION NR: AP4022486 S/0217/64/009/002/0242/0254

AUTHOR: Tsofina, L. M.; Liberman, Ye. A.

TITLE: Anions and the work of excitable tissues

SOURCE: Biofizika, v. 9, no. 2, 1964, 242-254

TOPIC TAGS: anion, cation, biopotential generation, excitable tissue, chlorine ion, anion distribution, membrane theory, rest potential, action potential

ABSTRACT: Formerly anions were considered to play a passive role in generating biopotentials, but more recent data indicate that chlorine ions are important anions in the work of excitable tissues. The present study represents a literature survey based on 87 sources and examines the following: anion distribution between cell and medium, membrane theory of chlorine distribution, effect of chlorine concentration change on rest potential and resistance of muscle fiber membranes, mechanism of chlorine distribution within the framework of the phase-membrane theory, role of chlorine in generating action potentials, and the effect of replacing chlorine ions in solution with

Card 1/2

GIAGOLEWA, I.M.; LIBERMAN, Ye.A. (Moskva)

Miniature potentials of the end plate and their role in the neuromuscular transmission. Usp.sovr.biol. 55 no.1:68-86 Ja-F '63. (MIRA 16:3)

(MYONEURAL JUNCTION) (ELECTROPHYSIOLOGY)

VORONIN, L.L.; LIBERMAN, Ye.A.

Role of bivalent cations in the maintenance of resting potentials in the muscle fibers of river crayfish. Biofizika 9 no.4:451-455 '64. (MIRA 18:3)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.; CHAYLAKHYAN, L.M.

Two basic concepts of the nature of bioelectric potentials of nerve and muscle fibers. Trudy MOIP. Otd. biol. 9:55-73 '64.
(MIRA 18:1)

1. Institut biofiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.; TSOFINA, L.M.

Role of extracellular ions in the generation of action potentials in the muscle fibers of crustaceans. Trudy MOIP. Otd. biol. 9:115-119 '64. (MIRA 18:1)

1. Instituta biofiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.; TSOFINA, L.M.

Study of the mechanism of the inhibition effect of bromide. Fiziol.zhur. 50 no.4:509-513 Ap '64. (MIRA 18:4)

1. Institut biofiziki AN SSSR, Moskva.

LIBERMAN, Ye.A.; TSOFINA, L.M.

Mechanism of membrane permeability for anions. Biofizika 10 no.4:701-703 '65. (MIRA 18:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

LIBERMAN, E. G.

Khoziaistvennyi raschet mashinostroitel'nogo zavoda. Moskva, Mashgiz, 1950. 212 p.

Economic estimate of a machine-building plant.

DLC: HD9705.R92.L48

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

LIBERMAN, Ye.G., kand. ekon. nauk.

Organization of the rhythm of work of an enterprise. Trudy Khar'. inzh.-ekon. inst. 9:3-11 '57. (MIRA 11:6)
(Kharkov--Electric industries)

LIBERMAN, Ye. G.

"Ways of Increasing the Profitableness of Socialist Enterprises."

dissertaton defended for the degree of Doctor of Economics at the Inst. for Economy.

Defense of Dissertation (Jan-Jul 1957)
Sect. of Economy, Philosophy, and Jurisprudence
Vest. AN SSSR, 1957, v. 27, No. 12, pp. 126-128

FISH, David Iosifovich; LIBERMAN, Ye.G., prof., doktor ekonom.nauk, retsenzent; LYUBAN, S.B., inzh., retsenzent; NOVOZHILOV, V.V., prof., doktor ekon.nauk, red.; CHFAS, M.A., red.izd-va; DLUGO-KANSKAYA, Ye.A., tekhn.red.

[Organization and planning of labor in machinery plants] Organizatsiia i planirovanie truda na mashinostroitel'nykh predpriiatiiakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1959. 327 p. (MIRA 12:12)
(Machinery industry) (Industrial management)

SHEVCHENKO, N.F., red.; AMELIN, F.S., red.; GRECHKO, V.Ye., red.; ISAYEV, V.I., red.; KUZUBOV, V.I., red.; LIBERMAN, Ye.G., prof., doktor ekonom.nauk, red.; MAKARENKO, V.P., red.; SHCHERBININ, I.F., red.; YARMOLOVICH, O.M., red.; KARDASH, G.I., red.; DONSKOY, Ya.Ye., red.; LIMANOVA, M.I., tekhn.red.

[First and foremost; ways to further increase labor productivity in machinery manufacturing enterprises of Kharkov] Samoe vazhnoe, samoe glavnoe; o putiakh dal'neishego povysheniia proizvoditel'nosti truda na mashinostroitel'nykh predpriiatiiakh Khar'kova. Khar'kov, Khar'kovskoe knizhnoe izd-vo, 1960. 205 p.
(MIRA 13:11)

1. Ukraine. Khar'kovskiy gorodskoy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva. 2. Nachal'nik tekhnicheskogo otdela Khar'kovskogo sovnarkhoza (for Kuzubov). 3. Khar'kovskiy inzhenerno-ekonomicheskiy institut (for Liberman).
(Kharkov--Machinery industry--Labor productivity)

LIBERMAN, Ye.G., red.

[Organization and planning in machinery manufacturing plants] Organizatsiia i planirovanie mashinostroitel'nykh predpriiatii. Moskva, Mashgiz, 1960. 567 p. (MIRA 14:4)
(Machinery industry)

PHASE I BOOK EXPLOITATION SOV/5725

Liberman, Yevsey Grigor'yevich, Doctor of Economic Sciences

Osnovnyye zadachi kompleksnoy mekhanizatsii i avtomatizatsii proizvodstva (Basic Problems in the Overall Mechanization and Automation of Industry) Kiyev, 1961. 41 p. (Series: Tovarystvo dlya poshyrennya politychnykh i naukovykh znan' Ukrayins'koyi RSR. Seriya VII, no. 2) 10,200 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politcheskikh i nauchnykh znaniy Ukrainskoy SSR.

Resp. Ed.: L. E. Gorelik; Ed.: B. A. Landysh; Tech. Ed.: A. A. Matviychuk.

PURPOSE: This booklet is intended for the general reader.

COVERAGE: The booklet describes in a popular form the essence of mechanization and automation, their development in the Soviet Union, and the funda-

Card 1/3

LIBERMAN, Ye. (Khar'kov)

Production planning and norms of a long-term operation. Vop. ekon. no.8:104-112 Ag '62. (MIRA 15:8)
(Industrial management)

LIBERMAN, Ye.G., doktor ekonomicheskikh nauk, prof.; KHAYKIN, V.P.

Using mathematical (correlation) methods in planning effective operation of machinery plants. Vest.mashinostr. 42 no.11:67-72 N '62. (MIRA 15:11)
(Machinery industry--Production standards)
(Correlation (Statistics))

ZVYAGINTSEV, Yu.Ye.; SAMSONOV, G.I., inzh., retsenzent; LIBERMAN, Ye.G., doktor ekon. nauk, red.; SALYANSKIY, A.A., red. izd-va; DEMKINA, N.F., tekhn.red.

[Operational planning in pressworking shops] Operativnoe planirovanie v pressovykh tsekhakh. Moskva, Mashgiz, 1963. 136 p. (MIRA 16:7)

(Machinery industry--Management)
(Sheet-metal work)

KOLEGAYEV, Rostislav Nikolayevich, kand. ekon. nauk; LIBERMAN, Ye.G., doktor ekon. nauk, prof., red.; SMIRNOV, Ye.I., red.; KARLOVA, L.V., tekhn. red.

[Determination of the optimum lifetime of machinery] Opredelenie naivygodneishikh srokov sluzhby mashin. Moskva, Ekonomizdat, 1963. 225 p. (MIRA 16:12)
(Machinery—Maintenance and repair)

KHAYKIN, Vladlen Pavlovich; NAYDENOV, Viktor Sergeyevich; GALUZA, Stanislav Grigor'yevich; LIBERMAN, Ye.G., doktor ekon. nauk, prof., red.; KONIKOV, L.A., red.; MISHNAYEVSKAYA, G.V., mlad. red.

[Correlation and statistical models in economic calculations] Korreliatsiia i statisticheskoe modelirovanie v ekonomicheskikh raschetakh. Moskva, Ekonomika, 1964. 215 p. (MIRA 17:9)

SAGALAYEV, G.V.; LIBERMAN, Yu.A.

Effect of the filler's surface and density of its packaging on the properties of plastic concrete. Plast. massy no.8:27-29 '65. (MIRA 18:9)

LIBERMAN, Yu.I.

Effect of peacetime craniocerebral injuries on the development of schizophrenia; statistical research. Zhur. nevr. i psikh. 64 no.9:1369-1373 '64. (MIRA 17:12)

1. Organizatsionno-metodicheskiy otdel (zaveduyushchiy V.V. Borinevich) Instituta psikhiatrii AMN SSSR, Moskva.

VARTANYAN, M.Ye.; KAZANETS, E.F.; LIBERMAN, Yu.I.; FAYVISHEVSKIY, V.A.

Statistical analysis of late sequelae from a closed injury of the head. Vop. psikh. no.4:284-289 '60. (MIRA 15:2)
(HEAD--WOUNDS AND INJURIES)

RUPPENEYT, Konstantin Vladimirovich, doktor tekhn. nauk; LIBERMAN, Yuriy Mikhaylovich; MATVIYENKO, Vera Vladimirovna; PESLYAK, Yuriy Apollinariyevich; MAN'KOVSKIY, G.I., otv. red.; KRASOVSKIY, I.P., red. izd-va; BAGRAMOVA, A.A., tekhn. red.; GUS'KOVA, O.M., tekhn. red.

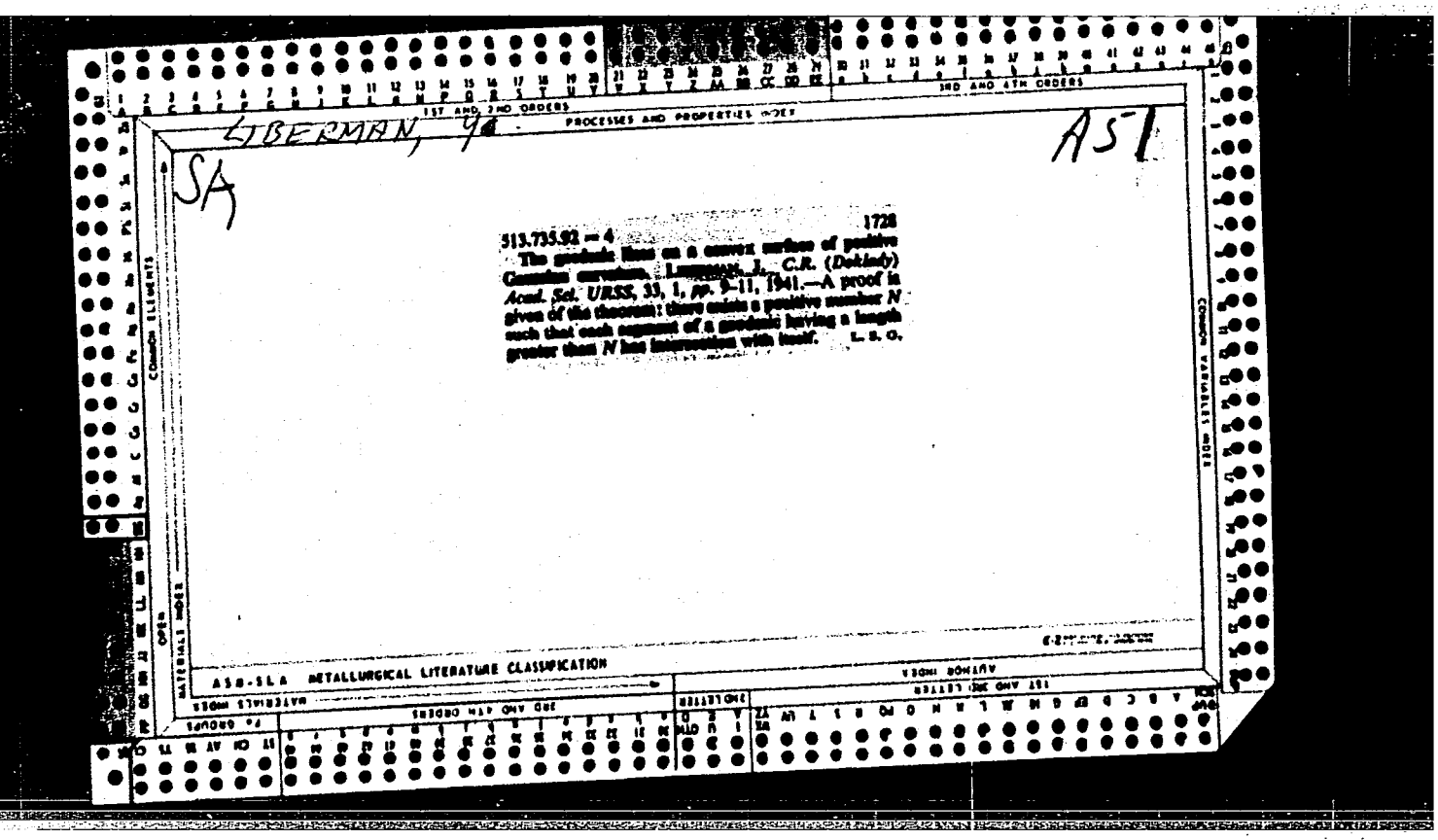
[Calculations of mine-shaft lining] Raschet krepi shakhtnykh stvolov. [By] K.V.Ruppeneit i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 121 p. (MIRA 15:7)

1. Chlen-korrespondent Akademii nauk SSSR (for Man'kovskiy).
(Shaft sinking)

LIBERMAN, Y.

"Geodesic Lines on Convex Surfaces," Dok. AN, 32, No. 5, 1941;

Inst. Math. and Mech.; State Univ. Leningrad, -1941-.



LIBERMAN, YU. M.

20-1-8/44

AUTHOR: LIBERMAN Yu.M.

TITLE: On the Question of the Type of Equations in the Theory of Plasticity (K voprosu o tipe uravneniy teorii plastichnosti)

PERIODICAL: Doklady Akad. Nauk SSSR, 1957, Vol.116, Nr.1, pp.32-34 (USSR)

ABSTRACT: In the plane case the condition of plasticity can always be written in the form

$$S^2 = f(p),$$

where

$$S^2 = \frac{1}{4}(\sigma_x - \sigma_y)^2 + \tau_{xy}^2$$

$$p = \frac{1}{2}(\sigma_x + \sigma_y).$$

S and p are two independent invariants of the tension tensor and f is a function which determines the form of the condition of plasticity. Geometrically this condition represents a circular family in the σ, τ -plane. The author shows: The equations of the theory of plasticity are of hyperbolic type for those values of the parameter p for which the mentioned circular

Card 1/2

On the Question of the Type of Equations in the Theory of Plasticity 20-1-8/44

family has an envelope. If the envelope degenerates in one point, then the equations are parabolic and for all other values of p they are of elliptic type.

ASSOCIATION: All-Union Institute for Scientific Research of Coal (Vsesoyuznyy nauchno-issledovatel'skiy ugol'nyy institut)
PRESENTED BY: L. I. Sedov, Academician, April 3, 1957
SUBMITTED: October 10, 1956
AVAILABLE: Library of Congress

Card 2/2

LIBERMAN, Yu. M., Cand Tech Sci -- (diss) "Analytical study of [redacted] manifestations of rock pressure [redacted] considering the time factor." Mos, 1958, 19 pp with graphs (Main Administration of Sci Res and ~~Project~~ Planning Organizations under Gosplan USSR. All-Union Sci Res ~~Carbon~~ COAL VUGI) 150 copies (KL, 42-58, 115)

LIBERMAN Yu. M.

127-58-1-26/28

AUTHORS: Lipson, M.A. and Kravchenko, I.V., Candidates of Technical Sciences, and Liberman, Yu.M., Engineer-Physicist

TITLE: On the Article by V.N. Maslenikov "On the Dependence of the Shape and Size of Samples on the Mechanical Properties of Rocks" (Na stat'yu V.N. Masenikova "O zavisimosti mekhanicheskikh svoystv gornykh porod ot formy i razmerov obraztsov")

PERIODICAL: Gornyy Zhurnal, 1958, Nr 1, pp 76-77 (USSR)

ABSTRACT: This article is a critical review of the Maslenikov article published in Gornyy Zhurnal, 1956, Nr 12. The reviewers conclude that Maslenikov's article does not contain any recommendations on the choice of sample sizes for tests. The article under review contains numerous inaccuracies and false assertions, and introduces only confusion in the solution of the problem in question.
There is one Soviet reference.

AVAILABLE: Library of Congress

Card 1/1 1. Rock-Properties 2. Rock-Test methods

LIBERMAN, Ya. M.

24-58-3-36/38

AUTHOR: Solomonov, M.

TITLE: Elaboration of the Problem of Rock Pressure (K razrabotke problemy gornogo davleniya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 173-174 (USSR)

ABSTRACT: A conference devoted to the phenomena of earth pressure in the rocks surrounding horizontal and vertical workings took place in December 1957 at the Mining Institute of the Academy of Sciences of the USSR. More than 100 representatives of 49 scientific-exploratory bodies, universities and mining enterprises took part in the conference. The conference brought to light problems of theoretical interest related to the distribution of stresses in the rocks, their displacement around the workings and an estimate of pressure upon the timbering of workings - all in line with contemporary notions of the theory of elasticity, plasticity and a creep - flowage. Of exceptional interest among the reports submitted were those which brought to light the role of anisotropy, the problems of an assessment of the creep-flow of rocks and of the influence of the stopping operation upon displacement of

Card 1/3

Elaboration of the Problem of Rock Pressure.

rocks and exposure of the earth pressure in drifts. The following papers were presented: A. S. Kosmodamianskiy on "An estimate of stressed conditions in an anisotropic massif with the workings within it"; Yu. M. Liberman on "The influence of the time factor revealed by the pressure and displacement of rock in drifts under the influence of stopping operations"; K. V. Ruppeneyt "Pressure and displacement in drifts under the influence of stopping operations"; M. I. Rozovskiy "Methodology of laboratory definition of a creep-flow character of rocks and calculation of the flowage around vertical shafts"; T. S. Yerzhanov "Methodology of a laboratory estimate of the characteristic of flowage of rocks and computation of a creep-flowage around vertical main shafts"; T. A. Kryzhanovskaya "Investigation of the problem of rock pressure upon timbering of horizontal workings based on the theory of viscosity and plasticity of the creep-flow". Of the papers devoted to the investigation conducted under shaft conditions, the conference drew attention to measurements made in the railway tunnels and subways in the Nikopol' Manganese basin and the Donets basin and in the main shafts at great depths. B. N. Vinogradov on "Investigation into the phenomenon of earth pressure in tunnel construction"; A. G. Barlas on "An

24-58-3-36/38

Elaboration of the Problem of Rock Pressure.

analytical examination of work (behaviour) of timbering in the weak surrounding rocks and measurements of deformations of timbering and the load in the horizontal workings of Nikopol' Manganese basin"; M. A. Komissarov on "The earth pressure around horizontal and inclined workings in connection with the stopping of coal seams under the conditions of the Donets basin"; A. M. Yanchur on "The investigation of the manifestation of earth pressure in vertical shafts of the Donets basin at great depths".The conference expressed its gratitude to the Czechoslovak scientist, Doctor-Engineer Rudol'f Kvapčil for his interesting communication on the theory of earth shocks.

Card 3/3

1. Geology--Conference--USSR

PANOV, Andrey Dmitriyevich; RUPPENEYT, Konstantin Vladimirovich; LIBERMAN, Yuriy Mikhaylovich; KOROLEVA, T.I., red.izd-va; IL'INSKAYA, G.M., tekhn.red.; KONDRAT'YEVA, M.A., tekhn.red.

[Earth pressure in stopes and development workings] Gornoe davlenie v ochistnykh i podgotovitel'nykh vyrabotkakh. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1959. 96 p. (MIRA 12:12)

(Earth pressure) (Subsidences (Earth movements))

LIBERMAN, Yu.M.

Discussion of theoretical rock pressure problems. Ugol' 34 no.2: 58-60 F '59. (MIRA 12:4)
(Subsidences (Earth movements))

RUPPENEYT, Konstantin Vladimirovich; LIBERMAN, Yuriy Mikhaylovich; RATNIKOVA, A.P., red.izd-va; SHKLYAR, S.Ya., tekhn.red.

[Introduction to rock mechanics] Vvedenie v mekhaniku gornykh porod. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 355 p. (MIRA 13:10)

(Mining geology)

LIBERMAN, Yu.M.

Automatic machines for pressing and sizing bimetallic contacts. Biul. tekh.-ekon. inform. no. 4:25-27 '61. (MIRA 14:5)
(Power presses) (Automatic control)

ZAKUTSKIY, I.A., kand.tekhn.nauk; LIBERMAN, Yu.M., kand.tekhn.nauk; RUPPENEYT, K.V., doktor tekhn.nauk

Calculation of spherical bearing surfaces of a prop support. Nauch. soob. Inst. gor. dela 4:89-96 '60. (MIRA 15:1)
(Mine timbering)

LIBERMAN, Yu.M.

Bearing pressure in stope areas. Fiz.-mekh.svois.,dav.i razr.-gor.porod no.1:86-95 '62. (MIRA 16:3)
(Stoping (Mining)) (Strains and stresses)

LIBERMAN, Yu.M.; PANOV, A.D.

[Using methods of continuum mechanics in the study of rock pressure; a report at the Fourth International Conference of the Bureau on Rock Mechanics] Primenenie metodov mekhaniki sploshnykh sred v issledovaniiakh gornogo davleniia; doklad na IV konferentsii Mezhdunarodnogo Biuro po mekhanike gornykh porod. Moskva, In-t gornogo dela im. A.A.Skochinskogo, 1962. 40 p. (MIRA 17:4)

LIBERMAN, Yu.M.; GOMES, TS.

Method for determining pressure on pillars in isolated panel development. Fiz.-mekh.svois.,dav.i razr.gor.porod no.1:133-140 '62. (MIRA 16:3)

(Barrier pillars) (Rock pressure)

LIBERMAN, Yu.M., kand. tekhn. nauk; ZAKUTSKIY, I.A., kand. tekhn. nauk

Relation between the resistance to bending of the bearing surfaces of supports and the hardness of rocks. Nauch. soob. LGD 15:110-119 '62. (MIRA 17:2)

TRUMBACHEV, Vladimir Fedorovich; MOLODTSOVA, Lyudmila Semenovna; LIBERMAN, Yu.M., kand. tekhn. nauk, otv. red.; KOSTAN'YAN, A.Ya., red.; RYLINA, Yu.V., tekhn. red.

[Using the optical method to study the stress state of rocks around mine workings] Primenenie opticheskogo metoda dlia issledovaniia napriazhennogo sostoianiia porod vokrug gornykh vyrabotok. Moskva, Izd-vo Akad.nauk SSSR, 1963. 93 p. (MIRA 16:5)

(Rock pressure--Models) (Photoelasticity)

SHEVYAKOV, L.D., akademik, otv. red.[deceased]; MAN'KOVSKIY, G.I., red.; AFENDIKOV, N.N., kand. tekhn. nauk, red.; YERSHOV, N.N., kand. tekhn. nauk, red.; LIBERMAN, Yu.M., red.; PANOV, A.D., red.[deceased]; RUSHCHINSKIY, M.V., red.; KRASOVSKIY, I.P., red.izd-va; PROZOROVSKAYA, V.L., tekhn. red.; LOMILINA, L.N., tekhn. red.

[Rock pressure and the lining of vertical shafts] Gornoe davlenie i krep' vertikal'nykh stvolov. Pod red. L.D. Sheviakova. Moskva, Gosgortekhizdat, 1963. 211 p. (MIRA 16:11)

1. Moscow. Institut gornogo dela imeni A.A.Skochinskogo.
(Rock pressure) (Shaft sinking)

IL'SHTEYN, A.M., doktor tekhn. nauk; LIBERMAN, Yu.M., kand. tekhn. nauk; MEL'NIKOV, Ye.A., kand. tekhn. nauk; RAKHIMOV,V., kand. tekhn. nauk; RYZHIK, V.M., kand. fiz.-matem. nauk

[Methods of calculating pilars and ore blocks of chambers in ore deposits] Metody rascheta tselikov i potolochin kamer rudnykh mestorozhdenii. Moskva, Nauka, 1964. 141 p. (MIRA 18:3)

L 47143-66 EWT(1) GW

ACC NR: AR6000717 SOURCE CODE: UR/0124/65/000/009/B105/B106

23

B

AUTHOR: Liberman, Yu. M.

TITLE: Evaluation of the accuracy of determining the differential characteristics of meteorological fields

SOURCE: Ref. zh. Mekhanika, Abs. 9B696

REF SOURCE: Tr. Leningr. gidrometeorol. in-ta, vyp. 22, 1964, 185-197

TOPIC TAGS: meteorologic observation, synoptic meteorology, atmospheric geopotential, INTERPOLATION

ABSTRACT: The method of optimal interpolation has been applied in the study of the behavior of the relative error in calculating the derivatives of the geopotential field on the 500-mbar surface by means of finite differences as functions of the number of station networks, differential span, and distribution of observatories and centers of regular networks. The method of calculating the values for normalized autocorrelation functions and for optimal interpolation error using an electronic computer is discussed. Evaluation of the relative error for determining the first difference, the ratio of the average squares of the difference itself and of the error of its determination, indicated that the error depends strongly on the location of the network centers relative to the stations, that it decreases with an increased difference span, and that it changes, depending on the form of the selected autocorrelation function. The general character of its dependence upon the span, however,

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L 47143-66
ACC NR: AR6000717

remains unchanged. It was noted that a failure to consider the correlation between the analytical errors results in too low a value for the relative error. Substitution of the measurement of the observational error by the error of interpolation leads to similar results. V. M. Kadyshnikov [Translation of abstract]

SUB CODE: 04

Card 2/2 afs

GANDIN, L.S.; ILIN, B.M.; LIBERMAN, Yu.M.; YUDIN, M.I.

Accuracy of determining finite differences in the analysis of meteorological fields. Trudy GGO no.168:113-122 '65.
(MIRA 18:8)

L 20761-66 EWT(1)/FCC GW

ACC NR: AP5028352 (N) SOURCE CODE: UR/0362/65/001/011/1130/1140

AUTHOR: Liberman, Yu. M.

ORG: Leningrad Hydrometeorological Institute (Leningradskiy Gidrometeorologicheskiy Institut)

TITLE: Accuracy of determination of finite differences in the analysis of the geopotential field using data of the existing aerological network

39
B

12,4195

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 11, 1965, 1130-1140

TOPIC TAGS: atmospheric geopotential, aerodynamics, finite difference

ABSTRACT: The prinicpal foundations, methods and results of numerical experiments for estimating the accuracy of determination of finite differences of geopotential fields are considered. The calculations deal with the territory of the Soviet Union and the Northern Hemisphere. The distribution of errors of the finite differences determination obtained agrees well with the distribution of theoretical errors of the geopotential interpolation. In accordance with the given criterion, the position of several additional stations is found. Orig. art. has: 2 tables, 5 figures, 6 formulas. [Author's abstract.]

SUB CODE: 04, 20/ SUBM DATE: 18May65/ ORIG REF: 007/

Card 1/1 UDC: 551.501.74

LIBERMAN, Z.M. (Bryansk).

Salivary calculus of the submaxillary gland. Stomatologiia no.1: 61 Ja-F '54. (MLRA 7:1)
(Calculi)

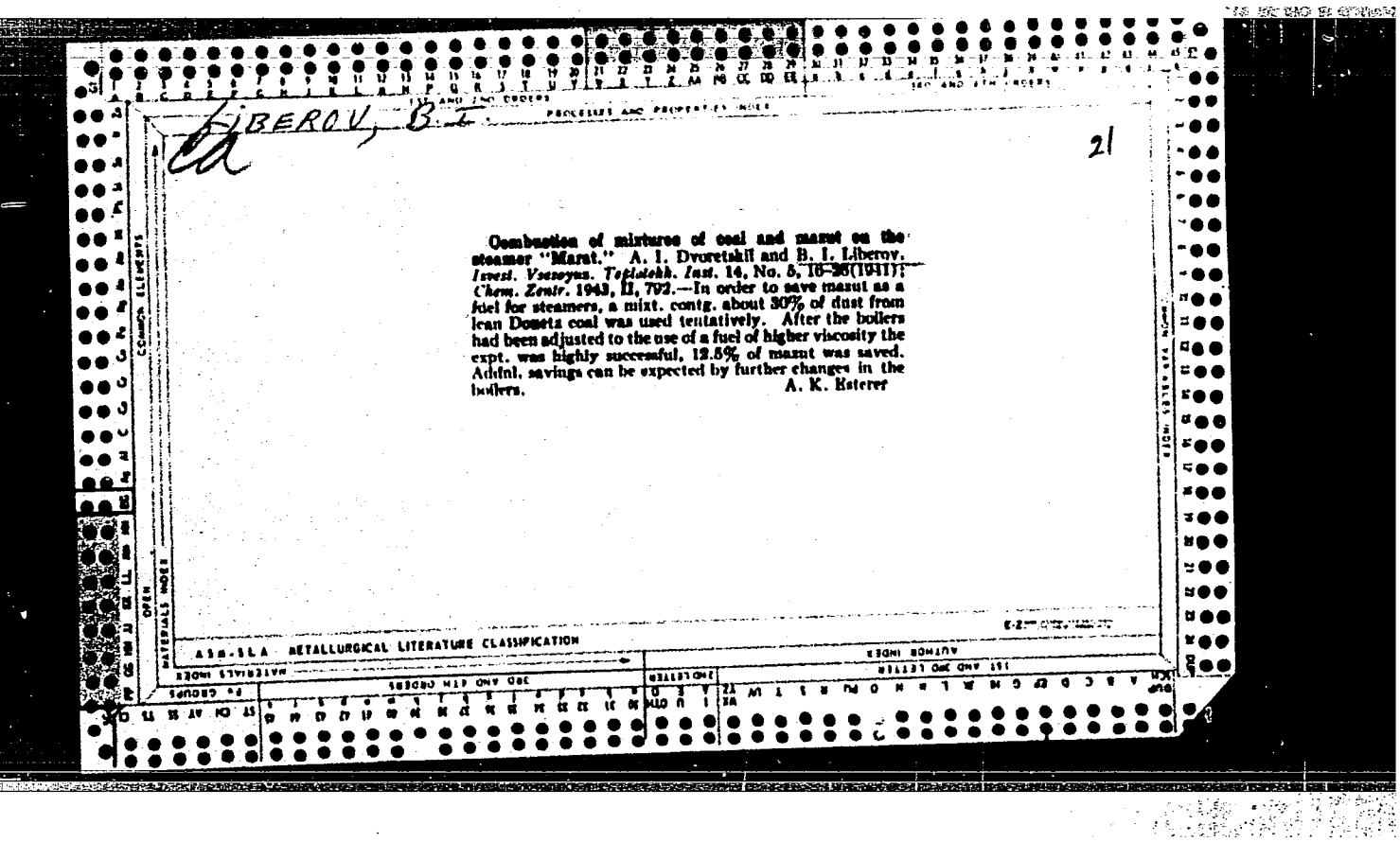
LIBERMAN, Z.M. (Bryansk)

Subcutaneous emphysema following the extraction of the root of a tooth. Stomatologiia 42 no.3:98 My-Je'63 (MIRA 17:1)

LIEBERMANN-LUCY, P.

Group therapy in educational guidance. Gyermekgyogyaszat 7 no.10:289-298 Oct 56.

1. A Budapesti Orvostudomanyi Egyetem I. sz. Gyermekklinikajan kozlemenye (Igazgato: Dr. Gegesi-Kiss, Pal egyet. tanar, akademikus).
(CHILD PSYCHOLOGY
group guidance & psychother. (Hun))



LIBEROV, B. I.

21

Combustion of mixtures of coal and mazut on the steamer "Marat." A. I. Dvoretskii and B. I. Liberov. *Izvest. Vsesoyuz. Teplotekh. Inst.* 14, No. 5, 16–26(1941); *Chem. Zentr.* 1943, II, 792.—In order to save mazut as a fuel for steamers, a mixt. contg. about 30% of dust from lean Donetz coal was used tentatively. After the boilers had been adjusted to the use of a fuel of higher viscosity the expt. was highly successful, 12.5% of mazut was saved. Addnl. savings can be expected by further changes in the boilers. A. K. Esterer

LIBERCV, B. I., Engr. Cand. Tech. Sci.

Dissertation: "Drying and Grinding Coal from the Moscow Area in Tumbling Ball Mills with a Simplified System of Preliminary Drying." All-Union Order of the Labor Red Banner Sci Res Heat Engineering Inst imeni F. Dzerzhinskiy, 20 Jan 47.

SO: Vechernyaya Moskva, Jan, 1947 (Project #17836)

LIBEROV, B. I. PA 30/49T35

USSR/Electricity Oct 48
Dryers, Coal
Power Plants, Electric-

"Preliminary Drying of Coal in Barrel-Type Ball Mills," B. I. Liberov, Cand Tech Sci, 3 pp

"Elek Stants" Vol XIX, No 10

Discusses expediency of preliminary drying of coal before putting it through the mill with a view to increasing the mill's output. Describes system used at some USSR power stations.

30/49T35

LIBEROV, B.I.

AID P - 789

Subject : USSR/Engineering

Card 1/1 Pub. 28 - 4/5

Authors : Liberov, B. I. and Zharnenkov, P. A.

Title : Combustion of petroleum asphalt (Gudron) and highly viscous fuel oil in the steam boiler

Periodical : Energ. byul. #2, 26-30, F 1954

Abstract : Description of an experimental boiler installation for testing of high viscous fuels with and without pre-heating as illustrated with general arrangement diagram. Full characteristics and the results of experimental operation are given in 3 tables and one chart. Suitability of different fuels is defined by viscosity and temperature of pre-heating.

Institution : None

Submitted : No date

LIBEROV, B.I.

AID P - 3612

Subject : USSR/Engineering

Card 1/2 Pub. 28 - 3/7

Authors : Zharnenkov, P. A., B. I. Liberov, D. K. Safaraliyev and G. M. Shteynshneyder

Title : Using goudron and its high-viscosity mixture with mazut as a fuel in petroleum refineries

Periodical : Energ. byul., 10, 10-20, 1955

Abstract : Because of mazut's value as a source of light petroleum products and lubricating oils, experiments have been undertaken in using goudron and some other liquid fuel as a mazut substitute. Certain data on the experimental use of goudron as a fuel in steam boiler furnaces was published in this journal, #2, 1954. The authors of this article discuss results of the experiment in burning goudron and its high-viscosity mixture with mazut in the tubular furnace of a refinery, and make positive deductions. Furnace sketch and 3 tables showing characteristics of goudron and goudron mixtures, effects on furnace, and

AID P - 3612

Energ. byul., 10, 10-20, 1955

Card 2/2 Pub. 28 - 3/7

steam expenditures.

Institution : None

Submitted : No date

LIBEROV, Boris Isaakovich, kand.tekhn.nauk; VASIL'CHENKO, Z.N., inzh., vedushchiy red.; SMIRNOV, P.V., inzh., red.; PONAMAREV, V.A., tekhn.red.

[Using high-viscosity cracking residue and cracking gas in furnaces of cracking instllations] Ispol'zovania vysokoviazkikh kreking-ostatkov i kreking-gaza v pechakh krekin-ustanovok. Moskva, Filial Vses. in-ta nauchnoi i tekhn.inform., 1956. 23 p. (Informatsiia o nauchno-issledovatel'skikh rabotakh. Tema 28, no.I-56-198) (MIRA 10:12)

(Cracking process--Waste products)

Liberov, B.I

LIBEROV, B.I.

Burning highly viscous cracking residues in the firebox of a cracking furnace. Energ.biul. no.12:12-21 D '57. (MIRA 10:12)
(Grosnyy--Cracking process)

LIBEROV, B.I.; BAKHSHIYAN, TS.A.; SHVETS, Ye.M.

Rotary nozzles for liquid fuel burning. Prom.energ. 17 no.1:21-24 Ja '62. (MIRA 14:12)
(Burners)

LIBEROV, B.I.

Air-atomizing burners operating by heated air. Khim.i tekh.topl. i masel 7 no.4:48-52 Ap '62. (MIRA 15:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut neftyanogo mashinostroyeniya.
(Oil burners) (Atomization)

LIBEROV, Boris Isaakovich, kand. tekhn. nauk; VRONSKIY, L.N., ved. red.

[Air jets for operation on liquid and gas fuel; spraying by nonheated and heated ventilator air] Vozdushnye forsunki dlia raboty na zhidkom i gazoobraznom toplive; raspylivanie nepodogretym i podogretym ventiliatornym vozdukhom. Moskva, Nedra, 1964. 99 p. (MIRA 17:12)

LIBEROV, Dmitriy Dmitriyevich; KOZHUKHOVA, D.S., red.; BOL'SHAKOVA, L.A., tekhn. red.

[Preliminary and commercial processing of sea animals in the North; Greenland seal]Pervichnaia i zavodskaia obrabotka morskogo zveria na Severe; grenlandskii tiulen'. Arkhangel'sk, Arkhangel'skoe knizhnoe izd-vo, 1959. 76 p. (MIRA 15:12)
(Russia, Northern--Harp seal)

STEPANOV, N.I.; DZHGUN, N.P.; LIBEROV, I.L.

Device for the removal of internal facets or rectangular grooves in piston rings. Avt.trakt.prom. no.11:30-31 N '53. (MLRA 6:11)
(Piston rings)

LIBEROV, I. Ye.: Master Tech Sci (diss) -- "Investigation, with a work-meter, of the power consumption and the optimum loading of a tractor attachment". Leningrad, 1958. 14 pp (Min Agric USSR, Leningrad Agric Inst), 150 copies (KL, No 6, 1959, 134)

YUR'YEV, Yu.K.; NOVITSKIY, K.Yu.; LIBEROV, L.G.

Obtaining of monoethanolarylamines from the ethylene and arylamines oxide. Izv.Akad.nauk.SSSR;Khim.otd. no.3:317-327 May-June 1951. (CIML 20:9)

1. Laboratory of Organic Chemistry imeni N.D. Zelinskiy of Moscow State University.

LIBEROV, L. G.

USSR

Reactions of ethylene oxide with aromatic and heterocyclic amines. II. Yu. K. Yur'ev, K. Yu. Novitskii, L. G. Liberov, and R. D. Yatsenko. *Vestnik Moskov. Univ. 8, No. 6, Ser. Fiz.-Mat. i Estestven. Nauk* No. 4, 129-32 (1953); cf. *C.A.* 46, 932c.—Reactions between stoichiometric amts. of ethylene oxide (I) and various amines took place at temps. ranging from 30-80°. The products of syntheses were identified by the m.p. or b.p. of the pure substances, m.p. of picrates and by N detn. The identified products are: monoethanol-β-naphthylamine, $C_{12}H_{13}ON$ (71.5 g. naphthylamine dissolved in 100 g. dioxane contg. 10 ml. ethanol and 5 ml. water reacted with 11 g. I at 30-40°), m. 52° (picrate, m. 162°); ethylethanolaniline, $C_{10}H_{15}ON$ (from 121 g. of freshly prepd. ethylaniline, 20 ml. water, and 44 g. I heated at 40-50°.) b_{15} 154°; monoethanol-o-chloraniline, $C_8H_{10}ONCl$ (by heating 81.9 g. o-chloraniline, 10 ml. ethanol, 1 ml. water, and 70 g. I at 75-80°), b_{15} 134.5-35°; 1-(β-hydroxyethyl)-α-pyridonimine, $C_7H_{10}O_2N$ (from 23.5 g. 2-amino pyridine, 5 ml. water and 5.5 g. I heated up to 60°), b_7 177-8°, m. 100°; 3-(β-hydroxyethyl)-4-methyl-2-iminothiazole, $C_6H_{10}ON_2S$ (from 48.0 g. of 2-amino-4-methylthiazole dissolved in 15 ml. ethanol and 1 ml. of water and 23 g. I at 50-60°) b_4 146-8° (picrate, m., 155.5-50°.

M. O. Holowaty

Liberov, L. G.

6

Interaction of ethylene oxide with aromatic and heterocyclic amines. Yu. K. Yur'ev, K. Yu. Novitskii, L. G. Liberov, and K. D. Kalenko. *Vestnik Moskov. Gosudarst. Univ.* 1953, No. 6, 129–32; *Referat. Zhur., Khim.* 1953, No. 8488.—When ethylene oxide (I) reacts at a high temp. with 2-$C_5H_4NNH_2$ (II), it yields 2-$C_5H_4NHCH_2CH_2OH$ (III); with PhNHEt (IV) I yields $HOCH_2CH_2NEtPh$ (V); with o-$ClC_6H_4NH_2$ (VI), I yields o-$ClC_6H_4NHCH_2CH_2OH$ (VII); with α-aminopyridine (VIII), I yields 1,2-dihydro-1-(2 hydroxyethyl)-2-iminopyridine (IX); with 2-amino-4-methylthiazole (X), I yields 3-(2-hydroxyethyl)-4-methyl-2-imino-4-thiazoline (XI). When 11 g. I is passed into 71.5 g. II, 100 g. dioxane, 10 ml. alc., and 5 ml. water for 1 hr. at 30–40°, distn. yields 23.1 g. III, b_3 197–8°, m. 52° (from abs. alc.); picrate, m. 162° (from alc.). The following are similarly obtained: 132 g. V, b_{15} 154°, n_D^{18} 1.5620, d_{20} 1.0506, from 121 g. IV in 20 ml. water and 44 g. I upon heating up to 40–50°; 29.5 g. VII, b_1 134.5–35°, n_D^{18} 1.5860, d_{20} 1.2320, from 81.9 g. VI in 10 ml. alc., 1 ml. water, and 70 g. I at 75–80°; 14 g. IX, b_{11} 173–4°, m. 112° (from abs. benzene), from 23.5 g. VIII in 5 ml. water and 5.5 g. I with heating to 60°; 6.5 g. XI, b_3 146–8° (in a N stream), n_D^{18} 1.5715 (picrate, m. 155.5–56°) from 48 g. X in 15 ml. alc. and 1 ml. water and 28 g. I at 50–60°. By hydrolysis of 10 g. IX, 8 g. 1-(2-hydroxyethyl)-2(1*H*)-pyridinone were obtained, b_7 177–8°, m. 100°.

Marjorie Ketner

LIBEROV, L. G.

AUTHORS: Krykov, Yu.B., Butyugin, V.K., Liberov, L.G., Stepanova, N.D. and Bashkirov, A.N. 65-6-4/13

TITLE: The use of radioactive carbon for the investigation of the behaviour of methane under conditions of the synthesis of hydrocarbons from CO and H_2 on iron catalysts. (Ispol'zovaniye radioaktivnogo ugleroda dlya issledovaniya povedeniya metana v usloviyakh sinteza uglevodorodov iz CO i H_2 na zheleznykh katalizatorakh).

PERIODICAL: "Khimiya i Tekhnologiya Topliva i Masel" (Chemistry and Technology of Fuels and Lubricants) 1957, No.6, pp.26-33 (USSR).

ABSTRACT: A critical survey of the literature on the problem of the role of methane in the synthesis of hydrocarbons from CO and H_2 is given. An experimental investigation of the above problem was carried out using methane containing radioactive C^{14}. Radioactive methane was obtained by hydrogenating $C^{14}O_2$ over an $Bi-Al_2O_3$ catalyst and $C^{14}O_2$ was obtained by decomposing a mixture of $BaCO_3$ + $BaC^{14}CO_3$ with sulphuric acid. The apparatus used for the synthesis of hydrocarbons is described and shown in a diagram. The catalyst used was developed in the Petroleum Institute of

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The use of radioactive carbon for the investigation of the behaviour of methane under conditions of the synthesis of hydrocarbons from CO and H_2 on iron catalysts. (Cont.)

65-6-4/13

the Academy of Science of the U.S.S.R., its composition $Fe_3O_4 + 10(AL_2O_3 + SiO_2) + K_2O$ with an addition of chromium (ref 24). It was obtained by the melting of magnetic iron oxide with activators and crushing the mass produced to 2-3 mm size. Before application the catalyst was reduced in a stream of hydrogen at 1000 C for 1.5 hours. In order to obtain a high activity and stability, it was also treated for 18-20 hours at 300 C and 20 atm. pressure with the synthesis gas CO + H_2 (1:1) passed with a volume velocity of 1500 hr^{-1}. Some preliminary experiments indicated that a good reproducibility of results was obtained. Typical results are given in tables 2 and 3 and in table 5 results of an experiment with radioactive methane (material balance of the process and the distribution of products obtained) are given. The results of fractional and radiometric analyses are given in table 4. It was established that under experimental conditions (20-25 atm, 310 C, volume velocity 1150 hr^{-1}, CO:H_2 = 1:1) methane behaves as an inert substance, it does not participate in the formation of higher hydrocarbons and does not enter into the

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The use of radioactive carbon for the investigation of the behaviour of methane under conditions of the synthesis of hydrocarbons from CO and H_2 on iron catalysts. (Cont.)

65-6-4/13

reaction of isotope exchange with carbon monoxide, carbon dioxide and hydrocarbons.

There are 5 tables, 1 figure and 29 references, including 10 Slavic.

ASSOCIATION: Petroleum Institute of the Academy of Sciences of the U.S.S.R. (Institut Nefti AN SSSR).

AVAILABLE:

Card 3/3

Liberov, L.G.

AUTHORS: Kryukov, Yu. B., Butyugin, V. K., Liberov, L. G., Stepanova, N. D., Bashkirov, A. N. 62-11-23/29

TITLE: Synthesis of the Butyl Alcohol Containing the Radioactive Carbon Isotope C^{14} (Sintez butilovogo spirta, soderzhashchego radioaktivnyy izotop ugleroda C^{14})

PERIODICAL: Izvestiya AN SSSR, Otdel.Khim.Nauk, 1957, Nr 11, pp. 1404-1406 (USSR)

ABSTRACT: Here a new method for the synthesis of butyl alcohol,which is tagged by radio-carbon C^{14}, is introduced. This method is characterized by simplicity and a high output of special product. The method consists of two phases: magnesium-organic synthesis of butyric acid with elimination of the latter in the form of sodium-butyrate and the restoration of the salt by lithiumaluminumhydride. The method can be applied for the synthesis of different alcohols containing the radio-carbon C^{14}. It is shown that a synthesis of the tagged butyl alcohol is also possible without preceding elimination of butyric acid by means of immediate restoration of the magnesium-organic complex $C_3H_7C^{O}{}_{-OMgBr}$ by lithiumaluminumhydride. There are 2 Slavic references.

ASSOCIATION: Petroleum Institute of the AN USSR (Institut nefti Akademii

Card 1/2

Synthesis of the Butyl Alcohol Containing the Radioactive Carbon Isotope C^{14} 62-11-23/29

nauk SSSR)

SUBMITTED: June 2o, 1957

AVAILABLE: Library of Congress

Card 2/2

KRYUKOV, Yu. B., BASHKIROV, A. N., BUTYUGIN, V. K., LIBEROV, L. G., and STEPANOVA, N. D.
(Petroleum Institute AS USSR)

"Intermediate Compounds in the Synthesis of Hydrocarbons and Oxygen-Containing Compounds of Carbon Monoxide and Hydrogen on Iron Catalysts." p. 58.

Isotopes and Radiation in Chemistry, Collection of Papers of 2nd All-Union Sci.Tech. Conf. on Use of Radioactive and Stable Isotopes and Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, 350p.

This volume publishes the reports of the Chemistry Section of the 2nd All Sci Tech Conf on Use of Radioactive and Stable Isotopes and Radiation in Science and the National Economy, sponsored by Acad. Sci. USSR and Main Admin for Utilization of Atomic Energy under Council of Ministers USSR, Moscow, 4-12 April 1957.

LIBEROV, L. G.

AUTHORS: Kryukov, Yu. B., Bashkirov, A. N., Butyugin, V. K., Liberov, L. G., Stepanova, N. D. 62-58-5-22/27

TITLE: Conversions of Butylene on the Conditions of Synthesis of CO and H_2 by Way of Molten Iron Catalysts (Prevrashcheniya butilena v usloviyakh sinteza iz CO i H_2 nad plavlenymi zheleznymi katalizatorami)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 5, pp. 642-644 (USSR)

ABSTRACT: The present report is a trial of investigating the ways of conversion of the olefins forming in the process of the synthesis of the hydrocarbons and of the oxygen-containing compounds of CO and H_2. Butylene marked by means of the carbon isotope C^{14} in the state (polozhenii) 1 served as indicator of the behavior of olefin under the conditions given by the synthesis. The experiment has shown that butylene does not participate in the formation of alcohols, as well, as in the formation of highest hydrocarbons (by way of C_9) neither and that it is no intermediate product. Butylene can react with CO and H_2 under the investigated conditions by producing a C_5-hydrocarbon. It also submits to dehydration, oxidation and hydro-

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Conversions of Butylene on the Conditions of Synthesis of CO and H_2 by Way of Molten Iron Catalysts 62-58-5-22/27

cracking. There are 1 figures, 1 table, and 11 references, 9 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute AS USSR)

SUBMITTED: January 2, 1958

1. Hydrogen isotopes--Synthesis 2. Carbon monoxide--Synthesis
3. Ethylenes--Chemical reactions 4. Butylene--Chemical reactions
5. Carbon isotopes (Radioactive)--Applications

Card 2/2

KRYUKOV, Yu.B.; BUTYUGIN, V.K.; LIBEROV, L.G.; STEPANOVA, N.A.; BASHKIROV, A.N.

Synthesis of butyl alcohol containing radioactive carbon C^{14}. Trudy Inst.nefti 12:299-303 '58. (MIRA 12:3)
(Butyl alcohol) (Carbon--Isotopes)

20-119-6-27/56

AUTHORS: Kryukov, Yu. B., Bashkirov, A. N., Butyugin, V. K., Liberov, L. G., Stepanova, N. D.

TITLE: On the Uniformity of the Mechanism of Synthesis of Hydrocarbons and Oxygen Containing Compounds of CO and H_2 (O yedinstve mekhanizma sinteza uglevodorodov i kislorodsoderzhashchikh soyedineniy iz CO i H_2)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 119, Nr 6, pp. 1152-1155 (USSR)

ABSTRACT: For the synthesis of CO and H_2 different schemes were proposed. According to them both processes mentioned in the title proceed independent of each other in two different ways. (Refs 1-5). Contrary to this fact experimental data exist, which permit the assumption that a uniform mechanism exists in introducing the process of synthesis and in the structure of carbon chains of the aliphatic compounds from CO under the influence of hydrogen. In order to prove that, the authors have experimentally investigated the ways of conversion of alcohols under the real conditions of synthesis, if the primary products of syn-

Card 1/3

On the Uniformity of the Mechanism of Synthesis of Hydrocarbons and Oxygen Containing Compounds of CO and H_2

thesis represented a carbon-alcohol mixture. Butanol marked by C^{14} and methanol, which were added to the gas of synthesis in such quantities that the conditions existing on the surface of the catalyst were not disturbed, served as indicators of the behavior of the alcohols formed of CO and H_2. Molten iron catalysts under high pressure (100 - 150 atmospheres excess pressure) served for this purpose. Figure 1 shows typical results. From figure 2 is to be seen that methanol is much more easily subject to different conversions than butanol. From the totality of the obtained results follows that the processes of synthesis of hydrocarbons and oxygen containing compounds of CO and H_2 are connected with each other. On the molten iron catalysts the afore-mentioned compounds and the alcohols possess a common source of origin. This is an unstable intermediate complex on the surface of the catalyst, which forms during the primary interaction between CO and H_2. This complex contains C-, H- and O-atoms. It is named C_1 by the authors. It is able to condense with its equals, whereby the formation of the carbon-carbon bond, furthermore that

Card 2/3 of a new oxygen containing compound with 2 carbon-C_2-atoms

S/195/60/001/002/006/010
B004/B067

AUTHORS: Kryukov, Yu. B., Bashkirov, A. N., Liberov, L. G., Butyugin, V. K., Stepanova, N. D., Kagan, Yu. B.

TITLE: Conversions of Iron Carbide Under the Conditions of the Synthesis of Hydrocarbons From Carbon Monoxide and Hydrogen

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No. 2, pp. 274 - 281

TEXT: The present paper was presented at the All-Union Conference on Organic Catalysis in November 1959. The authors attempted to explain the part played by carbides as intermediate compounds in the synthesis of hydrocarbons. They used a standard iron catalyst with chromium admixture, which was reduced at 1000°C and activated at 300°C and 20 atm with the initial gas mixture CO + H_2 (1 : 1), which contained $C^{14}O$. The catalyst, enriched with radioactive iron carbide, was then treated with pure CO + H_2. The radioactivity of the products formed was then measured. The authors found that mainly the following reactions took place in iron

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carbide (90%): hydrogenation to methane, exchange of C isotopes between CO and carbide. The rate of these reactions is low as compared to that of the synthesis reaction. Of 3000 CO molecules, only one exchanges its carbon; of 3000 CH_4 molecules, only five are formed by carbide hydrogenation. Hence, only 0.03% of the hydrocarbons with $C > 1$ was formed under the action of carbide. These data rebut the hypothesis according to which carbide products are intermediates in hydrocarbon synthesis from CO and H_2. There are 2 figures, 2 tables, and 22 references: 13 Soviet, 5 US, 1 British, and 3 German.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis of the AS USSR)

SUBMITTED: January 23, 1960

33496

S/195/61/002/005/023/027
E040/E185

5.1190

AUTHORS: Kryukov, Yu.B., Bashkirov, A.N., Liberov, L.G., Butyugin, V.K., and Stepanova, N.D.

TITLE: On the mechanism of chain growth in the synthesis of organic compounds from CO and H_2 on iron catalysts

PERIODICAL: Kinetika i kataliz, v.2, no.5, 1961, 780-787

TEXT: A brief survey of the previous investigations of the synthesis of organic compounds from CO and H_2 mixtures on cobalt and iron catalysts showed that the mechanism of the chain growth can be visualised either as 1) condensation of oxygen-containing complexes, with separation of water, or 2) the growth of the carbon chain can be assumed as being preceded by the splitting off of oxygen atoms from the carbon monoxide molecule and a subsequent chain growth by the mechanism of polymerisation of methyl radicals. The experimental evidence at present available appears to be somewhat contradictory and for this reason a study was made of the role played in the above synthesis by oxygen-free intermediate complexes of the methyl and hydrocarbon type

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